



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,021	03/22/2006	David Kennett	P71178US0	2540
136 7590 04/28/2009 JACOBSON HOLMAN PLLC 400 SEVENTH STREET N.W. SUITE 600 WASHINGTON, DC 20004				
EXAMINER				
LOW, LINDSAY M				
ART UNIT		PAPER NUMBER		
3721				
MAIL DATE		DELIVERY MODE		
04/28/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/573,021

**Applicant(s)**

KENNETT, DAVID

**Examiner**

LINDSAY M. LOW

**Art Unit**

3721

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1.4.6-31 and 34-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1.4.6-31 and 34-44 is/are rejected.
- 7) ☒ Claim(s) 39 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2008 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This action is in response to applicant's amendment received on May 27<sup>th</sup>, 2008.

#### ***Drawings***

2. The drawings were received on July 15<sup>th</sup>, 2008. These drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 80 and 81 (Fig. 31).
3. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### ***Claim Objections***

4. Claim 39 is objected to because of the following informalities: on the third line from the bottom of claim 39, the phrase "than the to which the ram" is unclear. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 4, 6, 14, 42, and 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 4 recites the limitation "said impact head." Claim 6 recites the limitation "said reaction means." Claim 14 recites the limitation "the control means." Claim 44 recites the limitation "the ram support structure." There is insufficient antecedent basis for these limitations in the claims. Regarding claim 42, the phrase "transmitting an impact force from the ram receiving an impact force from the ram transmitting it to an elongate member" is confusing and unclear.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 4, 6-7, 11-14, 16-21, 27, 34-35, 38-44 are rejected under 35 U.S.C. 102(b) as being anticipated by Jacquemet (4,799,557).

Jacquemet discloses the same invention including a chassis 6, a ram 1, and a linear induction motor (LIM) 2 having a stator that interacts with an LIM reaction

member (the magnetic core of ram 1). The ram reciprocates between a retracted position and an impact position. Note that the ram is accelerated by the reaction member (magnetic core) from the retracted position to the impact position due to the acceleration of gravity.

Regarding claim 4, the bottom portion of the ram 1 is an impact head that is made of a robust and solid material and transfers an impact from the ram to an elongate member.

Regarding claim 6, the outer surface of the ram is considered to be a plate of conductive metal material.

Regarding claim 11, the chassis is a casing defining an elongate chamber (see Fig. 2) and the ram is moveable within the chamber.

Regarding claims 12-14, electronic sensors 11 and 26 measure the position of the ram with respect to the chassis via a controller, as shown in Figs. 4-6. Sensor 26 is a limit sensor and detects when the ram reaches the retracted position (see col. 6 lines 29-30).

Regarding claims 16-18, an anvil assembly holds an anvil 7 and is positioned between the head of elongate object 8 and the impact head. The anvil assembly is translatably engagable with the chassis. Note that the portion 7b of the anvil 7 is remote from the chassis.

Regarding claims 19-21, the chassis 6 is mounted to a support structure 28, 30 (see col. 7 lines 4-8).

Regarding claim 27, Jacquemet's device is a pile driver (see abstract).

Regarding claims 38, 39, and new claim 41, Jacquemet's device extracts elongate objects 8 embedded in a body by driving the ram using an LIM 2 in an extraction stroke away from the elongate object (see col. 6 lines 52-68 through col. 7 lines 1-10). An engagement arrangement 29 engages the elongate object 8 and extracts it. As Jacquemet states in col. 7 lines 12-15, the ram's impact on the elongate object between extraction strokes is reduced to a lesser extent when it is returned to a proximate position to the elongate object.

Regarding new claims 43 and 44, the ram is a support structure having first and second ends. The impact head (end of ram proximate to the elongate member) is at the first end. The reaction member (magnetic core of ram 1) is of an elongate configuration and is secured to the ram as it is part of the ram.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacquemet (4,799,557).

Jacquemet discloses the same invention substantially as claimed but is silent about the overall operational height of the impact driver being less than 3m, 2.5m, 2m, and 1.5m. However, these features are admitted prior art since Applicant has not

adequately traversed the obviousness of such features, i.e. Applicant has not pointed out the specific reason why they are not obvious. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to form Jacquemet's pile driver at a sufficient height so as to facilitate use of the device.

11. Claims 1, 4, 6-17, 19-21, 27-31, 34-37, 40, and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al (4,844,661) in view of Rice (4,390, 307).

Martin discloses the same invention including a chassis 1, a ram 3, and electromagnetic means 2 to allow the ram 3 to oscillate between a retracted position and an impact position. The ram is accelerated by the interaction between electromagnet 2 and a reaction member 3d from the retracted position to the impact position at a rate that is greater than from the impact position to the retracted position and greater than the acceleration of gravity (see abstract).

Regarding claim 4, the bottom portion 3a of the ram is an impact head that is made of a robust and solid material.

Regarding claim 6, the reaction member 3d is a plate of conductive material.

Regarding claim 7, the ram 3 bears with the chassis 1 to allow movement of the ram relative to the chassis.

Regarding claims 8-9, the chassis has bearings 1a1, 1b1, and 1c1 to locate and support the ram for linear movement within. The bearings are located within a casing of the chassis (see Fig. 3) and retain the ram.

Regarding claims 12-14, electronic sensors allow positioning of the ram to be detected via a controller (see Fig. 12 and col. 6 lines 3-53). Sensor 34 is a limit sensor detecting the ram in its retracted position.

Regarding claims 16-17 and 19-21, an anvil assembly holds an anvil 4 and is positioned between the head of elongate object 6 and the impact head 3a. The anvil assembly is translatablely engagable with the chassis and its support structure 1d-1g.

Regarding claim 27, note that Martin's device is capable of being a pile driver (see col. 1 lines 10-15).

Regarding new claims 43 and 44, the ram is a support structure having first and second ends. The impact head 3a is at the first end. The reaction member 3d is of an elongate configuration and is secured to the ram.

Martin fails to disclose a linear induction motor for accelerating the ram. However, Rice teaches a pile driving device that uses a linear induction motor (LIM) with a stator 34 to drive piles for the purpose of controlling the rate of penetration of the pile (col. 1 lines 29-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have provided Martin's device with a linear induction motor as taught by Rice for the purpose of controlling the acceleration rate of the ram as a pile is driven.

Regarding claims 28-31, the modified device of Martin discloses the same invention substantially as claimed but is silent about the overall operational height of the impact driver being less than 3m, 2.5m, 2m, and 1.5m. However, these features are admitted prior art since Applicant has not adequately traversed the obviousness of



such features, i.e. Applicant has not pointed out the specific reason why they are not obvious. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to form Martin's modified pile driver at a sufficient height so as to facilitate use of the device.

12. Claims 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacquemet (4,799,557) in view of Deike (4,124,081)

Jacquemet discloses the same invention substantially as claimed but is silent about the device being mounted onto a vehicle. However, Deike teaches a post driving machine that is mounted into a vehicle for the purpose of facilitating portability of the device and for providing stability and support as the device is in operation. The post driver can rotate (col. 4 lines 54-59) and translate (Fig. 1) relative to the vehicle for the purpose of facilitating operation of the device. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to rotatably and translatably mount Jacquemet's device on a vehicle for the purpose of facilitating portability and operation and providing stability and support.

13. Claims 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al (4,844,661) in view of Rice (4,390, 307) as applied to claims 1-17, 19-21, and 27-37 above, and further in view of Deike (4,124,081).

Martin's modified device discloses the same invention substantially as claimed but is silent about the device being mounted onto a vehicle. However, Deike teaches a post driving machine that is mounted into a vehicle for the purpose of facilitating portability of the device and for providing stability and support as the device is in

operation. The post driver can rotate (col. 4 lines 54-59) and translate (Fig. 1) relative to the vehicle for the purpose of facilitating operation of the device. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to rotatably and translatably mount Martin's modified device on a vehicle for the purpose of facilitating portability and operation and providing stability and support.

### ***Response to Arguments***

14. Applicant's arguments filed May 27<sup>th</sup>, 2008 have been fully considered but they are not persuasive.

Applicant contends that Jacquemet uses an electromagnet instead of a linear induction motor (LIM). However, examiner asserts that Jacquemet's electromagnet 2 is deemed to be a linear induction motor because it uses coil induction to generate a magnetic force to accelerate the ram 1 linearly. It is acknowledged that Jacquemet doesn't use several coils stacked together to provide a continued linear motion. However, a limited amount of linear motion is provided through coil induction.

Applicant contends that Jacquemet relies on gravity and would not be effective on non-vertical planes. However, it should be noted that claims are given their broadest reasonable interpretation consistent with the specification. In this instance, the claims do not require the device to be operated in a non-vertical plane. In fact, the claims do not require the device to be operated in any particular plane. Therefore, the rejection is deemed proper.

Applicant contends that Martin relies on gravity and would not be effective on non-vertical planes. However, it should be noted that Martin's ram 3 is accelerated by gravity *and* a force of repulsion from the electro-magnet 2 to give an initial velocity (that is greater than the force of gravity) to the ram (see abstract). In addition, as with Jacquemet, it should be noted that claims are given their broadest reasonable interpretation consistent with the specification. In this instance, the claims do not require the device to be operated on a non-vertical plane. In fact, the claims do not require the device to be operated in any particular plane. Therefore, the rejection is deemed proper.

Applicant contends that Rice's pile comprises the armature of the LIM and therefore would not be acceptable for driving wooden or concrete piles. However, it should be noted that Rice is relied upon to show the use of an LIM to accelerate an elongate object. It is acknowledged that Rice operates differently than Martin or the present invention. However, Rice, Martin, and the present invention utilize a driver involving a magnetic force to drive an elongate object. Therefore, it would be within the abilities of one having ordinary skill in the art at the time of the invention to provide an LIM such as the one taught by Rice to Martin's device for the purpose of controlling the acceleration rate of the ram.

Applicant contends that Rice does not teach the driving piles in non-vertical planes and instead teaches a device used in seabed operations. However, similar to Jacquemet and Martin, it should be noted that claims are given their broadest reasonable interpretation consistent with the specification. In this instance, the claims

do not require the device to be operated on a non-vertical plane. In fact, the claims do not require the device to be operated in any particular plane. Therefore, the rejection is deemed proper.

Applicant contends that Jacquemet and Martin's devices could not be used on a vehicle, as they can only be used vertically. However, as noted by Fig. 1 in Deike, the pile driving device shown in the figure is being used in a vertical orientation. Therefore, even if Jacquemet and Martin's devices are used only in vertical orientations, the devices can certainly be mounted to a vehicle and used vertically, as shown by Deike. Note that articulation can occur when the device is moving from its retracted to operating position and vice versa.

For the reasons above, the grounds of rejection are deemed proper.

### ***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Boast, Okada, Ladouceur, and Parodi are cited as related inventions.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LINDSAY M. LOW whose telephone number is (571)272-1196. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00.

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rinaldi Rada can be reached on 571-272-4467. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. M. L./  
Examiner, Art Unit 3721

/Rinaldi I Rada/  
Supervisory Patent Examiner, Art Unit 3721

4/14/2009